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EXAMINER	
KOLKER, DANIEL E	
ART UNIT	**PAPER NUMBER**
1646	

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/731,411	COX ET AL.	
	Examiner	Art Unit	
	Daniel Kolker	1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-75* is/are pending in the application.

4a) Of the above claim(s) *14 - 18, 25 - 75* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13, 19-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-75* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8 April 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

There is no claim number 27. Misnumbered claims 28 - 76 have been renumbered 27 – 75. All references to claim numbers in this Office action are to the new numbering scheme.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1 - 42, drawn to methods of screening subjects, classified in class 435, subclass 4.

II. Claims 43 - 48, drawn to methods of screening environmental samples for BMAA, classified in class 435, subclass 4.

III. Claims 49 - 56, drawn to methods of screening environmental samples for the presence of cyanobacteria, classified in class 435, subclass 29.

IV. Claims 57 - 61, drawn to methods of inhibiting neurological disorders by reducing levels of a neurotoxic amino acid or neurotoxic derivative thereof, classification dependent upon structure.

V. Claims 62 - 68, drawn to methods of inhibiting neurological disorders by increasing the cellular concentration of a neuroprotectant, classified in class 435, subclass 375.

VI. Claims 69 - 75, drawn to kits for screening subjects, classified in class 436, subclass 8.

The inventions are distinct, each from the other because of the following reasons:

Although there are no provisions under the section for "Relationship of Inventions" in M.P.E.P. § 806.05 for inventions that are directed to <u>different</u> methods, restriction is deemed to be proper because these methods appear to constitute patentably distinct inventions for the following reasons:

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, the methods of Invention I are to be performed on subjects with or at risk for neurological disorders, whereas the methods of Invention II are to be performed on environmental samples. The bodies of literature describing assays on environmental samples and subjects with neurological disorders are not coextensive. Therefore a separate search would be required, presenting a burden for the Office.

Inventions I and II are not related to Invention III. The methods of Inventions I and II are designed to detect a neurotoxic amino acid, whereas the methods of Invention III are designed to detect the presence of cyanobacteria. The methods of Invention III could be performed without detecting an amino acid. For example, they could be performed by an antibody-based assay that detects an antigen of the surface of cyanobacteria. The methods of Invention III are classified separately from the methods of Inventions I and II, necessitating a separate search.

Inventions I – III are not related to Inventions IV and V. Inventions I – III are drawn to methods of detection, whereas Inventions IV and V are drawn to methods of treating neurological disease. Furthermore, the methods of Inventions IV and V seem to require the administration of an exogenous compound, which is not required for any of the detection methods. The literature describing methods of treating or preventing diseases is totally independent of the literature describing methods of detecting substances. Therefore a separate search would be required, presenting a burden for the Office.

Inventions I – III are related to Invention VI as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the methods of Inventions I - III could be performed without a kit; they could be performed in a laboratory using various chemicals for extraction of the sample and an HPLC for detection of the sample.

Invention IV is not related to Invention V because the methods of the two inventions require different steps and different compounds. The methods of Invention IV require the reduction of a neurotoxic amino acid or a derivative thereof, whereas the methods of Invention V do not explicitly require this reduction. In fact, as Invention V is drawn to methods of increasing

a neuroprotectant, Invention V permits high levels of the neurotoxic amino acid to remain. The literature describing neuroprotectants is not coextensive with the literature describing neurotoxic amino acids. Therefore, a separate search would be required, presenting a burden for the Office.

Inventions IV and V are not related to Invention VI. Invention VI is drawn to kits for screening subjects, whereas Inventions IV and V are drawn to methods of inhibiting disease. The methods of Invention IV and V cannot be carried out with the products of Invention VI. Because the methods are not to the product, a separate search would be required.

Further Restriction Required Within Invention I

Applicant recites numerous diseases in claims 12 – 18. These diseases have separate symptoms, mechanisms, and etiologies. Should applicant elect Invention I, further restriction is required. Applicant must also elect *one* of the following:

a) Amyotrophic lateral sclerosis-Parkinsonism dementia complex

b) Alzheimer's disease

c) Progressive supranuclear palsy

d) Parkinson's disease

e) Amytrophic lateral sclerosis

Applicant is advised that this is not a species election.

Election of Species within Invention I

This application contains claims directed to the following patentably distinct species of tissues on which the claimed invention is to be practiced:

a) brain tissue

b) cerebral-spinal fluid

c) hair

d) skin

e) nail

f) fingernail

g) toenail

h) feather

i) claw

j) hoof

k) horn

l) blood

m) serum

n) saliva

o) urine.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 22, 23, 27, 28, and 38 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP § 821.04. **Process claims that depend from or otherwise include all the limitations of the patentable product** will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowed product claim will not be rejoined. See "Guidance on Treatment of Product and Process Claims in light of In re Ochiai, In re Brouwer and 35 U.S.C. § 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

During a telephone conversation with Donna Perdue on November 16, 2004 a provisional election was made with traverse to prosecute the invention of Group I, claims 1 – 11, 13, and 19 – 24. A provisional election was made to further restrict prosecution to Alzheimer's disease, and to brain tissue as required above. Affirmation of this election must be made by applicant in replying to this Office action. Upon further consideration, the examiner has rejoined claim 12; claims 1 – 13 and 19 – 24 are under examination in the instant Office action. Claims 14 – 18 and 25 - 75 have been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 – 11 and 19 – 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims are drawn to methods of detecting neurological disorders. The specification, while being enabling for a method of screening for the presence of BMAA in patients who have Alzheimer's disease, does not reasonably provide enablement for any other neurological diseases, including, for example, multiple sclerosis, Huntington's disease, or epilepsy. Applicant has not presented a nexus between the method of detection described in the specification and any diseases other than Alzheimer's disease and ALS-PDC. Claims 1 – 10 and 19 – 24 are therefore rejected. Furthermore, neurofibrillary tangles are characteristic of many diseases besides Alzheimer's, including Down's syndrome, dementia pugilistica, and metabolic disorders. They are also found in the brains of normal elderly people (Kandel et al., p. 980). Therefore, claim 11 is rejected.

Claims 19 – 21 are drawn to methods of predicting the likelihood, latency to onset, and severity of the neurological disease. Even if the scope of these claims is limited to Alzheimer's disease, they are not enabled. The data presented in Table 3 of the specification indicate the levels of bound and free BMAA, as well as the cause of death, for twenty-three individuals. However, since the samples were obtained after death, they are necessarily retrospective. It is impossible to know, without undue further experimentation, if data obtained from living subjects could be used in a forward-looking manner, therefore claim 19 is rejected. Since the samples were obtained after death, they were necessarily obtained after the onset of the neurological diseases, in the cases where the subjects had neurological diseases. Given the retrospective nature of these data, applicant has shown no connection between the levels of BMAA and onset of disease. Therefore they cannot be used to determine the latency to onset of disease, so claim 20 is rejected. Although cognitive scales such as the Mini-Mental State Examination and the Alzheimer's Disease Assessment Scale can be used to indicate the severity of the cognitive changes in Alzheimer's (see Harvey et al., p. 58, paragraph beginning at the bottom of first column), applicant does not provide any information about the severity of symptoms, so no

correlation between BMAA levels and severity of symptoms can be made; thus claim 21 is rejected.

There are many factors considered when determining if the disclosure satisfies the enablement requirement and whether any necessary experimentation is undue. These factors include, but are not limited to: 1) nature of the invention, 2) state of the prior art, 3) relative skill of those in the art, 4) level of predictability in the art, 5) existence of working examples, 6) breadth of claims, 7) amount of direction or guidance by the inventor, and 8) quantity of experimentation needed to make or use the invention. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (FED. Cir. 1988). It is acknowledged that the level of skill in the art is high. However, as stated in the preceding paragraph, applicant has not shown how the method can be used to detect any disease other than Alzheimer's or ALS-PDC, and does not demonstrate that the method can be used to predict the likelihood of developing, latency to onset, or severity of disease. Furthermore, Alzheimer's disease is a complex disorder whose progression and severity is not uniform (Harvey et al., p. 58, second column, last complete paragraph, and Giannakopoulos et al., p. 70, fisrt column, last complete paragraph). The specification has not provided the person of ordinary skill in the art the guidance necessary to be able to use the method of detection as claimed by applicant. Due to the large quantity of experimentation necessary to determine if the method could be used as claimed, the lack of working examples and the teachings of the prior art and the complex nature of the invention, undue experimentation would be required of the skilled artisan to use the claimed invention. What Applicant has provided is a mere wish or plan and an invitation to experiment.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "protein-bound BMAA" is vague and indefinite, as it could mean either BMAA that is chemically or otherwise bound to protein or BMAA that has been incorporated into protein, i.e., via protein synthesis. Amending the claim to read "BMAA incorporated into protein" would overcome this rejection and would not be considered new matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 7 – 13, 22, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by both Ellison et al. and by Martinez et al. Claim 24 is also rejected under 35 U.S.C. 102(b) as being anticipated by Ellison et al. The claims are drawn to methods of screening subjects having or at risk of having Alzheimer's disease by analyzing tissue samples from said subjects to determine the presence of a neurotoxic amino acid associated with the disorder. Ellison et al. teach the measurement of glutamate, which is a neurotoxic amino acid (see Specification, p. 2, second sentence, for Applicant's definition of neurotoxic amino acid which includes glutamate receptor agonists, thereby including glutamate) in postmortem brain tissue of patients with Alzheimer's disease and controls. Since all people are at risk of developing Alzheimer's disease (see Cassel et al., particularly Figure 4.3 and Table 4.1, both on p. 36), the controls can be assumed to be patients at risk of developing said disease, even when they are asymptomatic. Ellison et al. teach that glutamate levels are significantly altered in brains of patients with Alzheimer's disease, thereby meeting the limitations of claims 1, 2, 7, 10 – 13, and 22 – 24. Martinez et al. teach that glutamate levels are significantly altered in cerebrospinal fluid taken from patients with Alzheimer-type dementia. Both Ellison et al. and Martinez et al. teach measuring glutamate in samples from people with Alzheimer's disease and from people who show no symptoms of Alzheimer's disease, thereby meeting the limitations of claims 7 - 9.

Claims 1 – 4, 7 – 13, and 22 – 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Kisby et al. (reference JR from Information Disclosure Statement filed April 12, 2004). The claims are drawn to methods of screening subjects having or at risk of having Alzheimer's disease for the presence of BMAA. Kisby et al. teach an HPLC-based method of detecting BMAA in neural tissue. Brain tissue was used from rats; cerebrospinal fluid and serum were used from monkeys. Kisby et al. explicitly contemplated the use of this method "to determine the role of BMAA in the Western Pacific amyotrophic lateral sclerosis/Parkinson-dementia complex for which cycad seed is the principal etiological candidate." (Kisby et al.,

abstract, final sentence, see also final sentence beginning on p. 45). This disease, ALS-PDC, is a form of Alzheimer's disease. It is a neurological condition characterized by both the cognitive dysfunctions (Brownson et al., reference OR from Information Disclosure Statement filed April 12, 2004, see especially p. 160, lines 2 – 4) and the neuropathology (Spencer et al., p. 519, final paragraph) typical of Alzheimer's disease. Lewin presents the link between BMAA and Alzheimer's disease as a fact (see especially p. 484, left-hand column, last full paragraph). Forman et al. (reference QR from Information Disclosure Statement filed April 12, 2004) indicate that there is a great degree of similarity between the neuroanatomical changes typical of ALS-PD and those seen in Alzheimer's disease, and suggest that these diseases have a common underlying mechanism (see p. 1726, Table 1, and p. 1730, paragraph beginning at the end of the first column). Therefore, ALS-PD is a form of Alzheimer's disease. Thus the method of detection devised by Kisby et al., to be used in the determination of BMAA levels in ALS-PD, is inherently a method for the detection of Alzheimer's disease. As indicated above, all people are at risk of developing Alzheimer's disease, even those who are asymptomatic.

The method of Kisby et al. was devised to help determine the role of BMAA in ALS-PD. The risk of ALS-PD is very high in the Chamorro population of Guam; Brownson et al. state that it is 100 times more prevalent in Chamorros than in residents of the mainland United States. Since the rate of prevalence is so much greater amongst the Chamorros, and Kisby et al. explicitly contemplated using their method to detect BMAA in this population, their method clearly meets the "at risk of having" limitation in claim 1, as well as claims 2 – 4, 7 – 13, and 22 – 24, which depend from claim 1. Furthermore, Kisby et al. performed their method on cerebrospinal fluid isolated from monkeys that had been administered BMAA daily for a year, at a dose of 100 – 350 mg/kg (p. 46, bottom of second column). Spencer et al. teach that this dose for a considerably shorter duration (a maximum of 17 weeks, see endnote 15 on p. 521) is sufficient to produce swelling with "amylaceous" material and Hirano bodies in neurons (see endnote 20). Giannakopoulos et al. teach that these are neuroanatomical characteristics of Alzheimer's disease (see particularly p. 67, first column, last sentence and p. 69, first column last sentence – second column, first sentence). Taken as a whole, the prior art indicates that the monkeys used by Kisby et al. in developing their method had a form of Alzheimer's disease. Thus their method of detection also meets the "having" limitation of claim 1, as well as claims 2 – 4, 7 – 13, and 22 – 24, which depend from claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kisby et al., in view of Duncan et al. (1990, reference LR from the Information Disclosure Statement filed April 12, 2004) and Duncan et al. (1992). For the purposes of this rejection, "protein-bound BMAA" is interpreted as meaning BMAA that can be released from protein by acid hydrolysis. As detailed above, Kisby et al. teach a method of detecting BMAA in brain tissue and contemplate its use in studying ALS-PD. Kisby et al. do not teach analyzing the amount of BMAA bound to protein. Their method includes the precipitation of protein with tricholoracetic acid (TCA); only the supernatant (i.e. containing free BMAA) is analyzed. One can reasonably assume that the method of Kisby et al. does not detect the level of BMAA in proteins, as proteins precipitate in the presence of TCA. Duncan et al. (1992) teach a method of analyzing total BMAA from cycad flour. On p. 1524, first column, Duncan et al. state that their method detects both free and conjugated BMAA, and refers to Duncan et al. (1990), where the method is described in more detail. Duncan et al. (1990) teach the hydrolysis of BMAA-containing proteinaceous samples with hydrochloric acid for 36 hours (p. 768, right column). The specification of the instant application teaches the hydrolysis of BMAA-containing proteinaceous samples for 24 hours (p. 38). Both methods are sufficient to release very high levels of BMAA from samples. The method of Duncan et al. (1990) indicates that a plant contains 1140 μg BMAA per gram of sample, and is sensitive down to 3.9 μg /g (p. 769, Table 2 and right column, second paragraph). The instant specification indicates that when only free BMAA is detected, levels as low as 3.3 μg /g can be detected, but when bound BMAA is released via hydrolysis, up to 1190 μg /g can be detected (Table 3).

The method of Duncan et al. uses a similar mechanism (hydrolysis) to release large amount of BMAA from proteinaceous samples. It would have been obvious to one of ordinary skill in the art to use a hydrolysis step as described by Duncan et al. in the assay described by Kisby et al. A motivation to do so would be to allow detection of all the BMAA in the sample, thereby being better able to correlate the level of BMAA with the presence or risk of acquiring a

disease. Since BMAA is a modified amino acid, proteins are made of amino acids, and proteins can be degraded into their constituent amino acids by hydrolysis, one of ordinary skill in the art would have expected combining these two methods to be successful in releasing protein-bound BMAA.

Conclusion

No claim is allowed. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Kolker whose telephone number is (571) 272-3181. The examiner can normally be reached on Mon - Fri 8:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brenda Brumback can be reached on (571) 272-0961. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eileen B. O'Hara

Daniel E. Kolker, Ph.D.

EILEEN B. O'HARA
PATENT EXAMINER